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| 09/594,816      | 06/16/2000  | Jonas Andersson      | 040071-079          | 1951             |

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EXAMINER

CHIANG, JACK

| ART UNIT | PAPER NUMBER |
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2642

16

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/594,816

Applicant(s)

J. Anderson

Examiner

J. Chiang

Group Art Unit

2642

#

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE -3- MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 6-3-04
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-22 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-19 is/are rejected.
- ☒ Claim(s) 20-22 is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
  - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

### CLAIMS

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5-11, 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Warnke (US 2109761).

Regarding claim 1, Warnke shows:

A driver (4-7);

An acoustic horn (2 or 31-32) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the horn against the user's ear;

The acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3).

(NOTE: in the interview dated on 18 June, 2003, the inventor (Mr. Anderson) and the examiner generally agrees that in order for a user to use any handset comfortably, the

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acoustic impedance of the phone has to be matched with the impedances of the user's ear and the speaker driver).

Regarding claim 5, Warnke shows:

An acoustic horn (2 or 31-32) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the horn against the user's ear;

The acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3).

Regarding claim 7, Warnke shows:

A body (figs. 1 or 3);

A driver (4-7);

An acoustic horn (2 or 31-32) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the horn against the user's ear, a large end of the horn (i.e. 29) extending to a position proximate an exterior surface of the body (see figs. 1 or 3);

The acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3).

Regarding claims 3, 6, 8-11, 13-15, Warnke shows:

The horn and its impedance matching (see comments in claim 1);

A driving membrane (4);

The horn can be integrally formed with the body (see figs. 1 or 3);

The telephone body (figs. 1 or 3) having an elongated shape;

A microphone (below 28).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warnke.

Regarding claims 4 and 12, Warnke shows a speaker assembly which usually have a membranes (i.e. 1302).

Warnke differs from the claimed invention in that it does not explicitly mention that the membranes has a diameter less than 1 mm.

However, from the present specification, pages 5 last paragraph, it discloses that the diameter of the membranes can be ranging from 1mm to 5mm, or even larger. In other words, there is no teaching of criticality for the specific claimed 1mm. Therefore, it would have been obvious for one skilled in the art to use any speaker technology, including the 1mm-diameter membranes, in Warnke, as long as the basic concept of

providing an acoustic frequency response that is substantially efficient within the practice of the phone operation (page 2, right col. lines 1-9 in Warnke).

5. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warnke in view of Yosimoto (US 6381126)

Regarding claims 16-19, Warnke shows the speaker assembly with a phone device. Warnke differs from the claimed invention in that it does not explicitly mention the application of the speaker assembly with devices like a PC, pager and PDA.

However, it is commonly seen that today's electronic device have multiple functions, such as a phone having a PC, pager and PDA functions etc., or phones, PC, pagers and PDA having a speaker function. This is shown by Yoshimoto (col. 8, lines 17-25). Further, from the various applications claimed in the present application, such as the phone, PC, PDA, pager etc., it can also be seen that there is no teaching of criticality for any one particular environment. Therefore, it would have been obvious for one skilled in the art to use Warnke's speaker design concept in the phone, or PC, or PDA etc. with/without the teaching of Yoshimoto. This is simply an intended use of Warnke's speaker concept because a phone having a PC or PDA function would not change the operation of the speaker function.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Warnke in view of Rabe (US 5963640).

Regarding claim 2, Warnke shows a speaker assembly (4, 2).

Warnke differs from the claimed invention in that it does not show a plate having holes. However, it is commonly seen speaker assembly having a face plate having holes. This is taught by Rabe, such as element 32. The idea of having a face plate for an electronic device, including a speaker, is to prevent foreign substance to pass into the device. Therefore, it would have been obvious for one skilled in the art to modify Warnke with a plate as taught by Rabe, this is a common practice which functions to protect the device as it is well known for one skilled in the art.

7. Claim 1-3, 6, 8-11, 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabe (US 5963640) in view of Warnke.

Regarding claim 1, Rabe shows:

A driver (24);

An acoustic guide (34, see fig. 5) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the phone against the user's ear.

Rabe differs from the claimed invention in that the acoustic guide is not in the shape of a horn having a cross-sectional area that generally increases in an exponential manner. However, Warnke teaches providing an acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3 in Warnke).

Hence, it would have been obvious for one of ordinary skill in the art to modify Rabe's acoustic guide with a horn design as taught by Warnke, such that the modification

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contemplates a tuned relation between the diaphragm of the speaker and the air column of the horn so as to cover a band of sound frequency best adapted for voice transmission, and thereby to obtain maximum vibration within the desired frequency range and producing maximum output to the user (page 1, col. 1, lines 48-51, col. 2, lines 10-15 in Warnke).

Regarding claim 5, Rabe shows:

An acoustic guide (34) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the phone again the user's ear.

Rabe differs from the claimed invention in that the acoustic guide is not in the shape of a horn having a cross-sectional area that generally increases in an exponential manner. However, Warnke teaches providing an acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3 in Warnke).

Hence, it would have been obvious for one of ordinary skill in the art to modify Rabe's acoustic guide with a horn design as taught by Warnke, such that the modification contemplates a tuned relation between the diaphragm of the speaker and the air column of the horn so as to cover a band of sound frequency best adapted for voice transmission, and thereby to obtain maximum vibration within the desired frequency range and producing maximum output to the user (page 1, col. 1, lines 48-51, col. 2, lines 10-15 in Warnke).



Regarding claim 7, Rabe shows:

A body (10);

A driver (24);

An acoustic guide (34, see fig. 5) having an acoustic impedance matched with impedances of an ear and the driver in order for the user to put the phone again the user's ear.

Rabe differs from the claimed invention in that the acoustic guide is not in the shape of a horn having a cross-sectional area that generally increases in an exponential manner. However, Warnke teaches providing an acoustic horn (2 or 31-32) has a cross-sectional area that generally increases in an exponential manner from a small end proximate the driver to a large end (see figs. 1 and 3 in Warnke).

Hence, it would have been obvious for one of ordinary skill in the art to modify Rabe's acoustic guide with a horn design as taught by Warnke, such that the modification contemplates a tuned relation between the diaphragm of the speaker and the air column of the horn so as to cover a band of sound frequency best adapted for voice transmission, and thereby to obtain maximum vibration within the desired frequency range and producing maximum output to the user (page 1, col. 1, lines 48-51, col. 2, lines 10-15 in Warnke).

Regarding claims 2-3, 6, 8-11, 13-19, the combination of Rabe and Warnke shows:

The horn and its impedance matching (see Warnke);

A driving membrane (in speaker 24 in Rabe, 4 in Warnke);

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A plate having one or more holes (see 32 in Rabe);

The horn can be integrally formed with the body (34 in Rabe; figs. 1 or 3 in Warnke);

The telephone body (10 in Rabe; figs. 1 or 3 in Warnke) having an elongated shape;

A microphone (23 in Rabe; below 28 in Warnke);

The combination further shows a portable phone (Rabe), in which today's portable phones have multi-functions, including pager, PC, PDA having writing instrument.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabe.

Regarding claims 4 and 12, Rabe shows a speaker assembly which usually have a membranes (i.e. in 24).

Rabe differs from the claimed invention in that it does not explicitly mention that the membranes has a diameter less than 1 mm.

However, from the present specification, pages 5 last paragraph, it discloses that the diameter of the membranes can be ranging from 1mm to 5mm, or even larger. In other words, there is no teaching of criticality for the specific claimed 1mm. Therefore, it would have been obvious for one skilled in the art to use any speaker technology, including the 1mm-diameter membranes, in Rabe, as long as the basic concept of

providing an acoustic frequency response that is substantially efficient within the practice of the phone operation.

10. Claims 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **ARGUMENT**

10. In response to the remarks (pages 7-11), Clark is withdrawn. Therefore, no further discussion is made regarding Clark. Argument is answered in the rejections above, see comments above.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chiang whose telephone number is 703-305-4728. The examiner can normally be reached on Mon.-Fri. from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar, can be reached on 703-305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack Chiang  
Primary Examiner  
Art Unit 2642